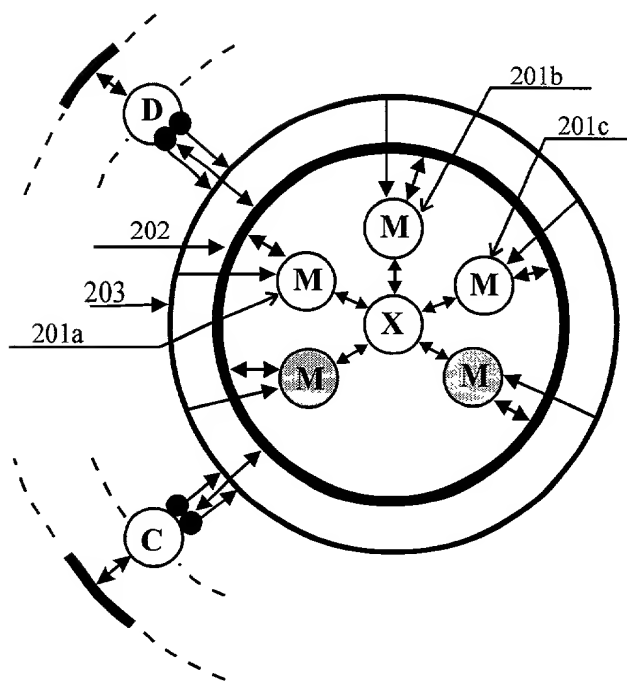
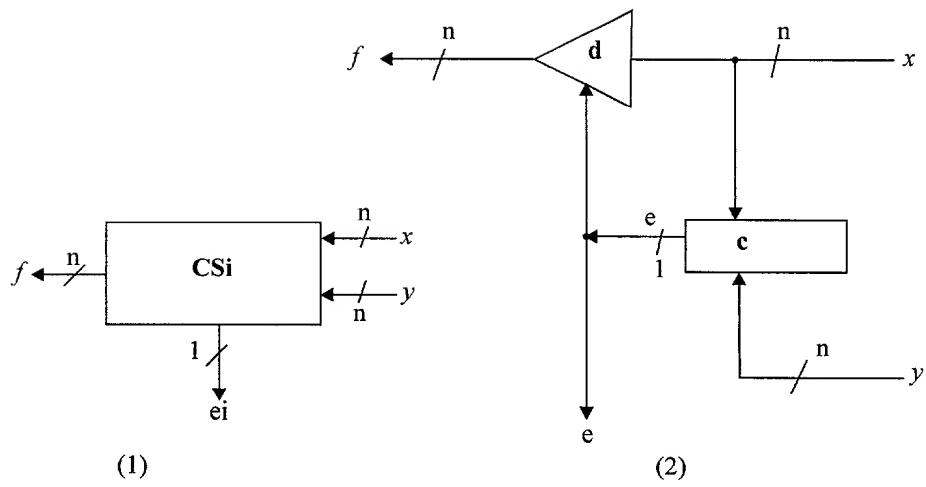


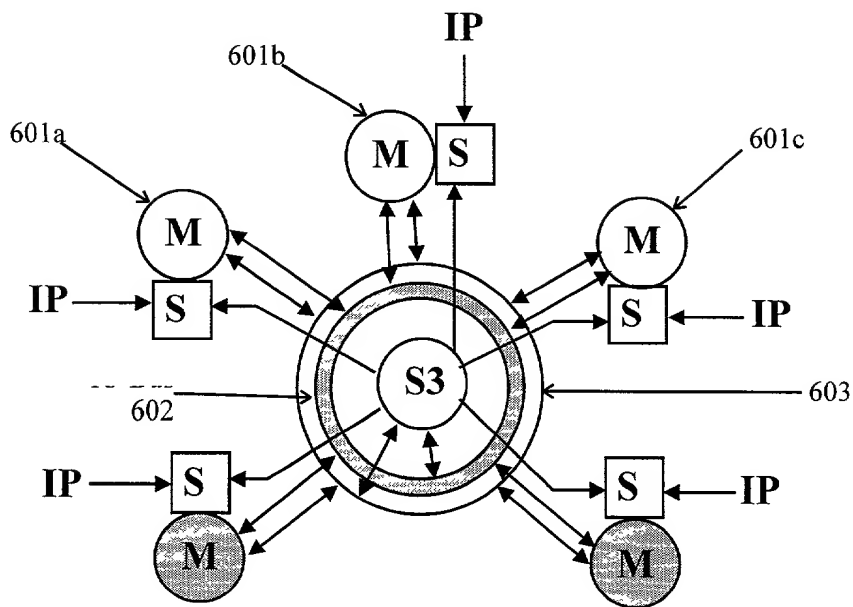
**Fig. 1**



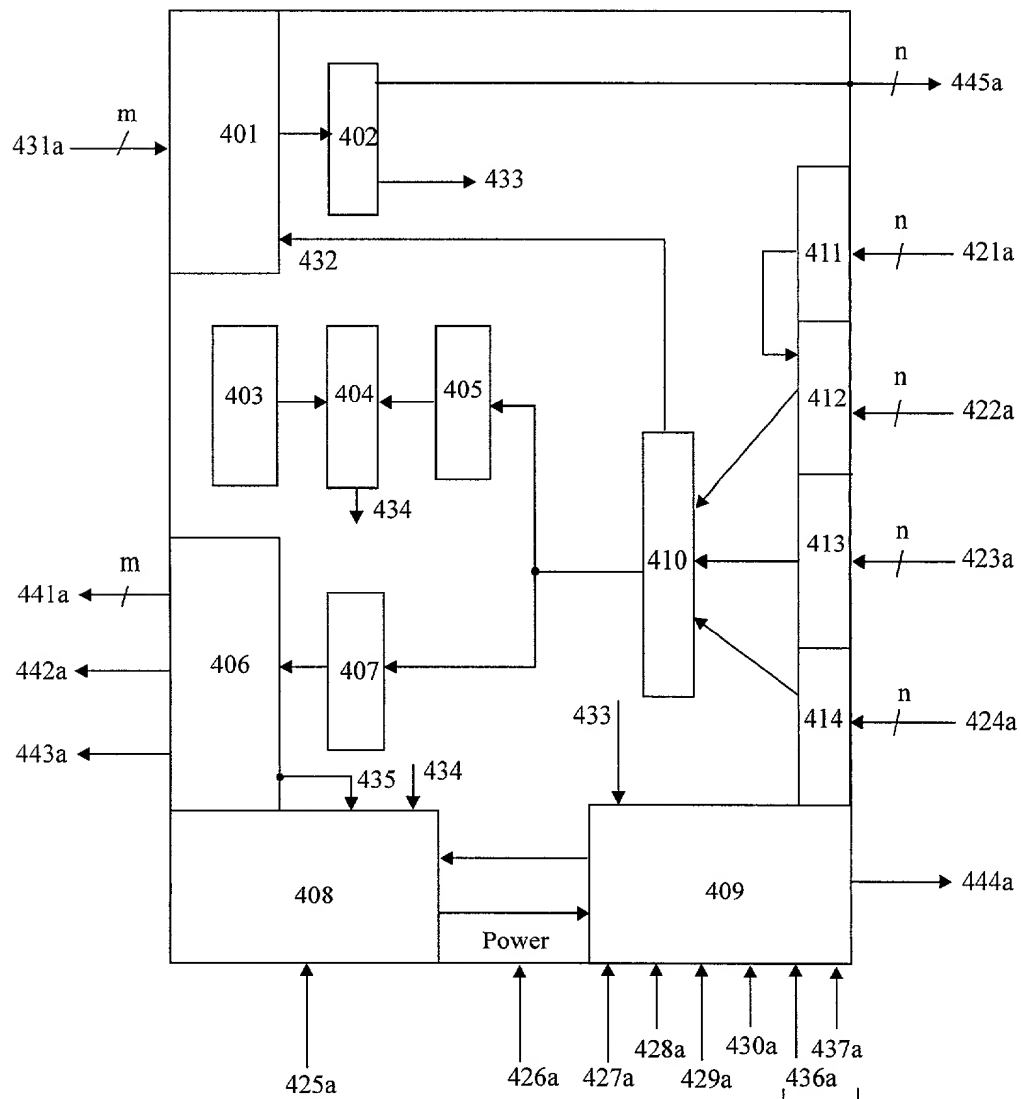
**Fig. 2**



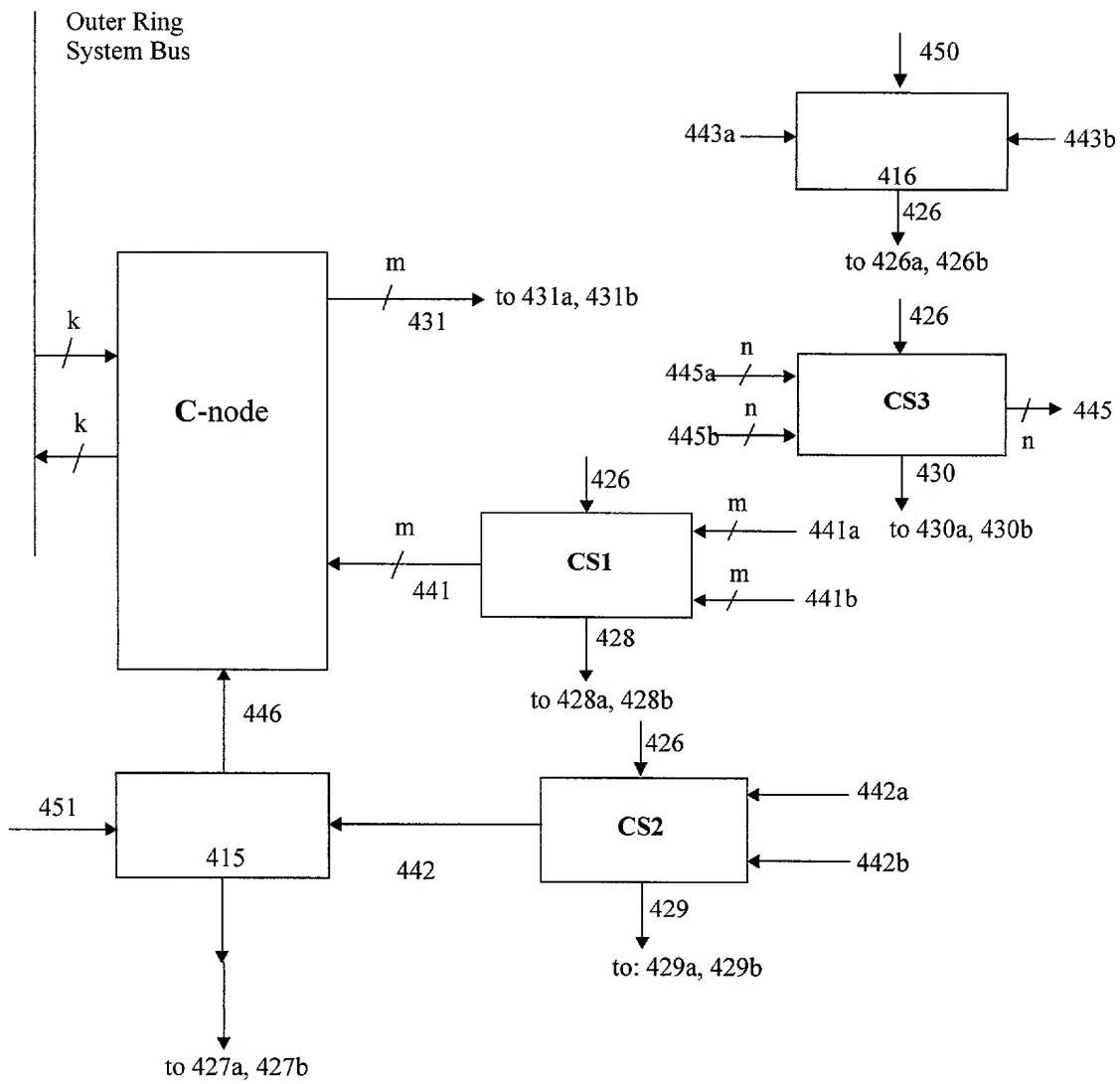
**Fig. 3**



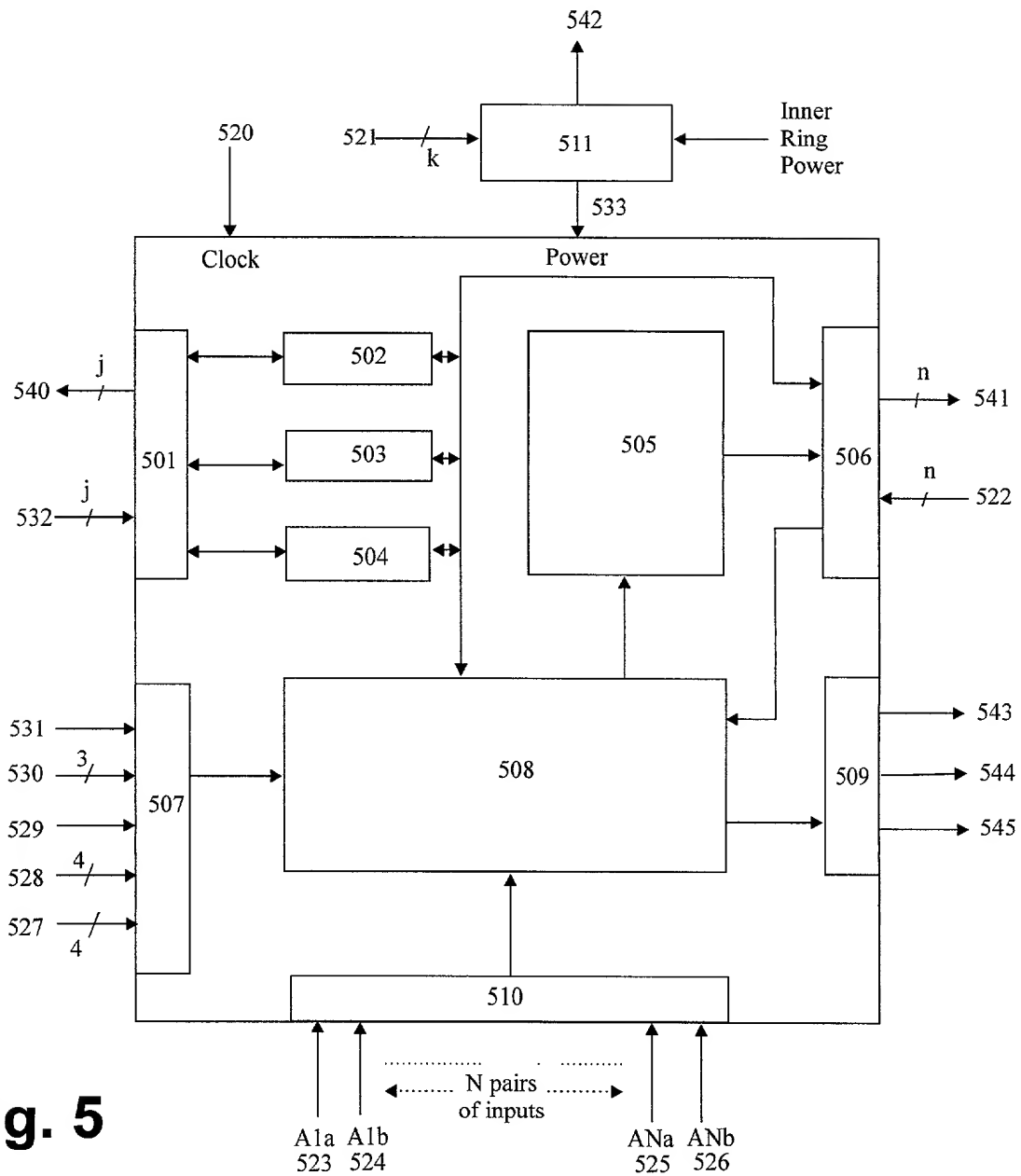
**Fig. 6**



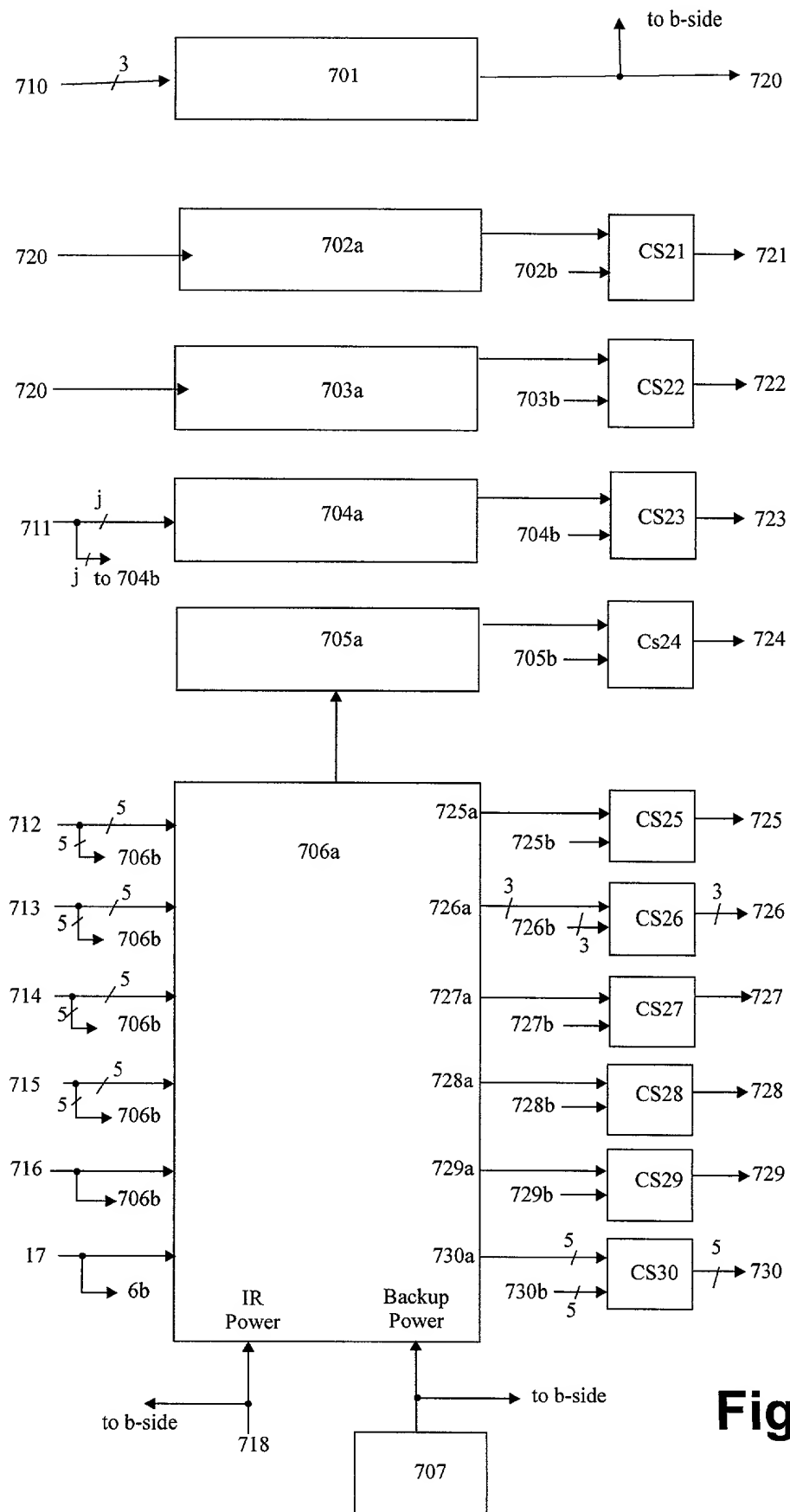
**Figure 4a**



**Fig. 4b**



**Fig. 5**



**Fig. 7**

## Figure 8a: Power-On Sequence for the M-Cluster, Controlled by S3-Nodes

- (1) S3 nodes switch Power On (Signal 730) for M-node #1, command BIST (Built In Self Test) by signal 725.
  - (2a) If BIST is OK, keep Power On for #1.
  - (2b) If BIST fails, Power Off for #1.
- (2) The S3 nodes record status (“Good” or “Failed”) for #1 in the M-Cluster Status Register MC-SR (705a, 705b).
- (3) Repeat steps (1)-(3) until 3 good M-nodes are found, or all M-nodes have been tested, and only 1 or 2 good M-nodes exist.
- (4) After 3 good M-nodes are found, Power Off each remaining “Good” node after BIST, record Status as “Spare” in MC-SR.
- (6) After all M-nodes have been tested, transfer MC-SR contents (724) via the IC-Bus (602) to the powered good M-nodes.
- (7) *Command* TMR, Duplex, or Simplex operation (726) to the M-Cluster. If no good M-nodes were found, send “M-Cluster dead” message (728) to operator.
- (8) Switch Power On (729) for all A-nodes (at once). The Inner Ring is now powered and the remaining Power-On steps are controlled by the M-nodes in TMR, Duplex, or Simplex configuration.
- (9) Send “Power On in Outer Ring” Command (727) to the M-Cluster.

### **Figure 8 b: Power-On Sequence for the Outer Ring (one node), Controlled by M-Cluster**

This sequence is initiated by the “Power On in Outer Ring” command 727.

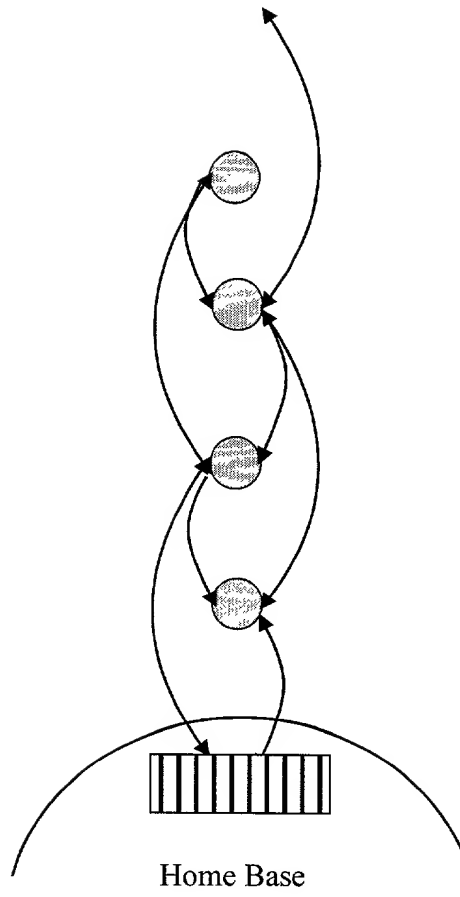
- (1) Send the “Reset A-pair” command via the M-Bus to A-pair #1.
- (2a) If Reset succeeds, “All is well” is received from A-pair #1 and Power On command is sent to the Power Switch of C-node (or D-node) #1. The Power-On command includes C-node (or D-node) BIST command as well.
- (2b) If Reset fails, record “Failed” status for C-node #1 in their Outer Ring Status Registers OR-SR (504) of M-nodes, go to (1) for A-pair #2.
- (3a) If Power On and BIST both succeed, the M-nodes record “C-node #1 is good” in their OR-SR (504), go to (1) for A-pair #2.
- (3b) If either the Power Switch fails to switch on, or BIST fails after power is switched on, record “Failed” in OR-SR for C-node #1., command Power Off if BIST failed, go to (1) for A-pair #2.

### **Figure 8c: Power-Off Sequence for DiSTARS**

- (1) S3 nodes switch Power Off (729) for all A-nodes (at once), start Interval Timer (703a).
- (2) Removal of A-node power puts the power switches of all C-nodes and D-nodes in the Off position.
- (3) S3 nodes switch Power Off (730) for the M-nodes.







**Fig. 10**